☑005/015

Attorney Docket No.: US 020027

IN THE CLAIMS:

1. (Currently Amended) A method for transmitting video data, comprising the steps of:

(a)   ~~identifying~~ assigning a recipient to one of a plurality of multicast groups ("MGs"), each of the MGs being based on one of the group ~~consisting of~~ comprising: (1) an identified average or minimum available bandwidth of a link over which a data stream of a given video segment is to be ~~transmitted~~ multicasted; and (2) [[a]] an identified capability of ~~a recipient host~~ the MG to which the data stream is to be ~~transmitted~~ multicasted;

(b)   selecting a corresponding one of the group ~~consisting of~~ comprising: (1) one of a plurality of predetermined ranges of bandwidths, so that the selected range contains the identified average or minimum available bandwidth of the MG of the recipient; and (2) one of a plurality of different data stream types, so that the identified capability of the MG of the recipient ~~host~~ is used to process data of the selected data stream type;

(c)   coding the data stream in a manner which takes advantage of the range of bandwidths or type of data stream that has been or is to be selected; and

(d)   ~~transmitting~~ multicasting the coded data stream over the link to the MG of the recipient ~~host~~.

2. (Original) The method of claim 1, wherein

step (c) precedes step (a), and

step (c) includes coding a plurality of data streams, each corresponding to a respectively different one of the plurality of predetermined ranges of bandwidths.

3. (Original) The method of claim 2, wherein a scalable coding technique is used, and two of the plurality of data streams have a common base layer and respectively different enhancement layers.

4. (Original) The method of claim 3, wherein a first one of the two data streams has an enhancement layer with frequency weighting, selective enhancement or any other quality improvement tool targeted towards a particular bit-rate range, and a second one of the two data streams has an enhancement layer without frequency weighting.

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5. (Original) The method of claim 1, wherein

step (a) precedes step (c), and

steps (a), (b) and (c) are performed in real time or near real time in response to a request for the video segment.

6. (Currently Amended) The method of claim 1, wherein:

step (a) precedes step (c),

steps (a), (b), (c) and (d) are performed in first and second iterations for the same video segment,

a respectively different average or minimum available bandwidth of the MG of the recipient or ~~recipient host~~ capability bandwidth of the MG of the recipient is identified in step (a) during each of the first and second iterations,

a respectively different coded data stream is provided for the same video segment in step (c) during each of the first and second iterations.

7. (Currently Amended) The method of claim 1, wherein step (a) includes receiving from the MG of the recipient ~~host~~ an identification of the average or minimum available bandwidth of the link or an identification of the MG of the recipient ~~host~~ capability when the link is established.

8. (Currently Amended) The method of claim 1, wherein the identified capability of the MG of the recipient is the ability to perform motion compensation.

9. (Currently Amended) The method of claim 1, wherein:

step (a) includes determining an average or minimum available bandwidth of a link over which one of the data streams is to be ~~transmitted~~ multicasted;

step (b) includes selecting the one of the plurality of ranges having a greatest data rate among all of the plurality of ranges that can be accommodated by a data rate of the link over which the video data are to be ~~transmitted~~ multicasted; and

step (c) includes coding a plurality of data streams using a fine granular scalability technique, each of the plurality of data streams corresponding to a respectively different range of data rates at which the data streams are to be ~~transmitted~~ multicasted.

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10. (Currently Amended) A system for ~~transmitting~~ multicasting video data, comprising the steps of:

(a)   means for ~~identifying~~ assigning a recipient to one of a plurality of multicast groups ("MGs"), each of the MGs being based on one of the group ~~consisting of~~ comprising: (1) an identified average or minimum available bandwidth of a link over which a data stream of a given video segment is to be ~~transmitted~~ multicasted; and (2) [[a]] an identified capability of ~~a recipient host~~ the MG to which the data stream is to be ~~transmitted~~ multicasted;

(b)   means for selecting a corresponding one of the group ~~consisting of~~ comprising: (1) one of a plurality of predetermined ranges of bandwidths, so that the selected range contains the identified average or minimum available bandwidth of the MG of the recipient; and (2) one of a plurality of different data stream types, so that the identified capability of the MG of the recipient ~~host~~ is used to process data of the selected data stream type;

(c)   means for coding the data stream in a manner which takes advantage of the range of bandwidths or type of data stream that has been or is to be selected; and

(d)   means for ~~transmitting~~ multicasting the coded data stream over the link to the MG of the recipient ~~host~~.

11. (Currently Amended) The system of claim 10, wherein the coding means codes a plurality of data streams representing the same video segment, each data stream corresponding to a respectively different one of the plurality of predetermined ranges of bandwidths or a respectively different one of the plurality of data stream types, the system further comprising:

means for storing the plurality of data streams, so that any one of the plurality of data streams is available for ~~transmission~~ multicast upon request.

12. (Currently Amended) A machine readable medium that contains computer program code, wherein, when the computer program code is executed by a processor, the processor performs a method for ~~transmitting~~ multicasting video data, comprising the steps of:

(a)   ~~identifying~~ assigning a recipient to one of a plurality of multicast groups ("MGs"), each of the MGs being based on one of the group ~~consisting of~~ comprising: (1) an identified average or minimum available bandwidth of a link over which a data stream of a given video segment is

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to be ~~transmitted~~ multicasted; and (2) [[a]] an identified capability of ~~a recipient host~~ the MG to which the data stream is to be ~~transmitted~~ multicasted;

(b)   selecting a corresponding one of the group ~~consisting of~~ comprising: (1) one of a plurality of predetermined ranges of bandwidths, so that the selected range contains the identified average or minimum available bandwidth of the MG of the recipient; and (2) one of a plurality of different data stream types, so that the identified capability of the MG of the recipient ~~host~~ is used to process data of the selected data stream type;

(c)   coding the data stream in a manner which takes advantage of the range of bandwidths or type of data stream that has been or is to be selected; and

(d)   ~~transmitting~~ multicasting the coded data stream over the link to the MG of the recipient ~~host~~.

13. (Original) The machine readable medium of claim 12, wherein

step (c) precedes step (a), and

step (c) includes coding a plurality of data streams, each corresponding to a respectively different one of the plurality of predetermined ranges of bandwidths.

14. (Currently Amended) The machine readable medium of claim 12, wherein:

step (a) includes determining an average or minimum available bandwidth of a link over which one of the data streams is to be ~~transmitted~~ multicasted;

step (b) includes selecting the one of the plurality of ranges having a greatest data rate among all of the plurality of ranges that contain a data rate of the link over which the video data are to be ~~transmitted~~ multicasted; and

step (c) includes coding a plurality of data streams using a fine granular scalability technique, each of the plurality of data streams corresponding to a respectively different range of data rates at which the data streams are to be ~~transmitted~~ multicasted.

15. (Original) The machine readable medium of claim 12, wherein

step (a) precedes step (c), and

steps (a), (b) and (c) are performed in real time or near real time in response to a request for the video segment.

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16. (Currently Amended) The machine readable medium of claim 12, wherein:

     step (a) precedes step (c),

     steps (a), (b), (c) and (d) are performed in first and second iterations for the same video segment,

     a respectively different average or minimum available bandwidth of the MG of the recipient or ~~recipient host~~ capability bandwidth of the MG of the recipient is identified in step (a) during each of the first and second iterations

     a respectively different coded data stream is provided for the same video segment in step (c) during each of the first and second iterations.

17. (Currently Amended) A signal encoded with data representing computer program code, wherein, when the computer program code is executed by a processor, the processor performs a method for transmitting video data, comprising the steps of:

(a)   ~~identifying~~ assigning a recipient to one of a plurality of multicast groups ("MGs"), each of the MGs being based on one of the group ~~consisting of~~ comprising: (1) an identified average or minimum available bandwidth of a link over which a data stream of a given video segment is to be ~~transmitted~~ multicasted; and (2) [[a]] an identified capability of ~~a recipient host~~ the MG to which the data stream is to be ~~transmitted~~ multicasted;

(b)   selecting a corresponding one of the group ~~consisting of~~ comprising: (1) one of a plurality of predetermined ranges of bandwidths, so that the selected range contains the identified average or minimum available bandwidth of the MG of the recipient; and (2) one of a plurality of different data stream types, so that the identified capability of the MG of the recipient ~~host~~ is used to process data of the selected data stream type;

(c)   coding the data stream in a manner which takes advantage of the range of bandwidths or type of data stream that has been or is to be selected; and

(d)   ~~transmitting~~ multicasting the coded data stream over the link to the MG of the recipient ~~host~~.

18. (Original) The signal of claim 17, wherein

     step (c) precedes step (a), and

step (c) includes coding a plurality of data streams, each corresponding to a respectively different one of the plurality of predetermined ranges of bandwidths.

19. (Currently Amended) The signal of claim 17, wherein:

step (a) includes determining an average or minimum available bandwidth of a link over which one of the data streams is to be ~~transmitted~~ multicasted;

step (b) includes selecting the one of the plurality of ranges having a greatest data rate among all of the plurality of ranges that contain a data rate of the link over which the video data are to be ~~transmitted~~ multicasted; and

step (c) includes coding a plurality of data streams using a fine granular scalability technique, each of the plurality of data streams corresponding to a respectively different range of data rates at which the data streams are to be ~~transmitted~~ multicasted.

20. (Currently Amended) The method of claim 1, wherein step (b) includes selecting which data stream to ~~transmit~~ multicast based on the capabilities of the recipient ~~host~~.

21. (Original) The method of claim 1, further comprising switching between FGS and MC-FGS structures based on bandwidth.

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